Matthew Mendoza - Assignment 05 part 1

CSC 174 section 2 Spring 2023

- Matthew Mendoza - Assignment 05 part 1
  - Trigger Name : `Inc_enrollment_number`
    - `Inc_enrollment_number` - Show Current Number Of Students
    - `Inc_enrollment_number` - Adding Three Students
    - `Inc_enrollment_number` - Show `NoOfStudents` after adding 3 students
  - Trigger Name : `Del_enrollment_number`
    - `Del_enrollment_number` - Show Current Number Of Students
    - `Del_enrollment_number` - Adding Three Students
    - `Del_enrollment_number` - Show `NoOfStudents` after removing 3 students

Trigger Name : `Inc_enrollment_number`

When add a new record in the Enrolled table, update the corresponding value of `NoOfStudents` enrolled in the course.

```
DELIMITER //
CREATE TRIGGER Inc_enrollment_number
AFTER INSERT ON Enrolled -- after inserting a record into the Enrolled table
FOR EACH ROW
BEGIN -- start the trigger
    IF(NEW.CourseNo IS NOT NULL) THEN
        UPDATE Course -- update the Course table with the new value of
NoOfStudents
        SET NoOfStudents = NoOfStudents + 1 -- increment the NoOfStudents by 1
        -- where the CourseNo is the same as the CourseNo in the new record in the
Enrolled table
        WHERE CourseNo = NEW.CourseNo;
    END IF;
END //
DELIMITER ;
```

```
matthewmendoza2@ecs-pd-proj-db:~                    —    □    ×

mysql> DELIMITER //
mysql> CREATE TRIGGER Inc_enrollment_number
    -> AFTER INSERT ON Enrolled
    -> FOR EACH ROW
    -> BEGIN
    ->     IF(NEW.CourseNo IS NOT NULL) THEN
    ->         UPDATE Course
    ->         SET NoOfStudents = NoOfStudents + 1
    ->         WHERE CourseNo = NEW.CourseNo;
    ->     END IF;
    -> END //
Query OK, 0 rows affected (0.00 sec)

mysql> DELIMITER ;
mysql>
```

Inc_enrollment_number - Show Current Number Of Students

```
/*
 VALIDATION : check the current NoOfStudents in the Course,
 shows all students before Inc_enrollment_number trigger was created.
 Expect 11 students in Operations Management.
*/
SELECT * FROM Course WHERE CourseNo = '3300010';
-- count the number of students in Operations Management
SELECT COUNT(*) FROM Enrolled WHERE CourseNo = 3300010;
```

```
matthewmendoza2@ecs-pd-proj-db:~                                    —    □    ×

mysql> SELECT * FROM Course WHERE CourseNo = '3300010';
+----------+----------------------+--------------+--------------+-----------+
| CourseNo | CourseName           | NoOfStudents | InstructorID | TASSN     |
+----------+----------------------+--------------+--------------+-----------+
| 3300010  | Operations Management |          11 | 900000004    | 200100002 |
+----------+----------------------+--------------+--------------+-----------+
1 row in set (0.00 sec)

mysql> -- count the number of students in Operations Management
mysql> SELECT COUNT(*) FROM Enrolled WHERE CourseNo = 3300010;
+----------+
| COUNT(*) |
+----------+
|       11 |
+----------+
1 row in set (0.00 sec)

mysql>
```

Inc_enrollment_number - Adding Three Students
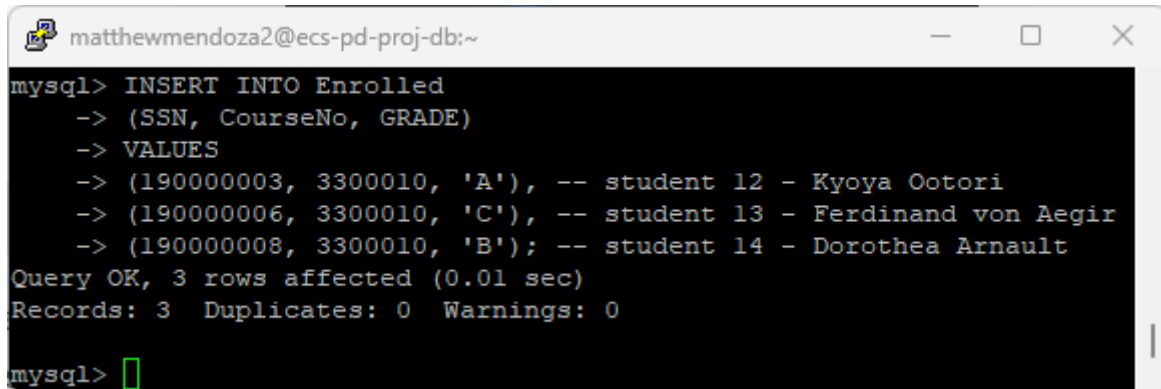
```
/*
 INSERT CLAUSE - enroll 3 students
    Kyoya Ootori, Ferdinand von Aegir, and Dorothea Arnault
```

```
   into Operations Management (CourseNo = '3300010')
   */
   INSERT INTO Enrolled
   (SSN, CourseNo, GRADE)
   VALUES
   (190000003, 3300010, 'A'), -- student 12 - Kyoya Ootori
   (190000006, 3300010, 'C'), -- student 13 - Ferdinand von Aegir
   (190000008, 3300010, 'B'); -- student 14 - Dorothea Arnault
```

```
matthewmendoza2@ecs-pd-proj-db:~                              —    □    X

mysql> INSERT INTO Enrolled
    -> (SSN, CourseNo, GRADE)
    -> VALUES
    -> (190000003, 3300010, 'A'), -- student 12 - Kyoya Ootori
    -> (190000006, 3300010, 'C'), -- student 13 - Ferdinand von Aegir
    -> (190000008, 3300010, 'B'); -- student 14 - Dorothea Arnault
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql>
```
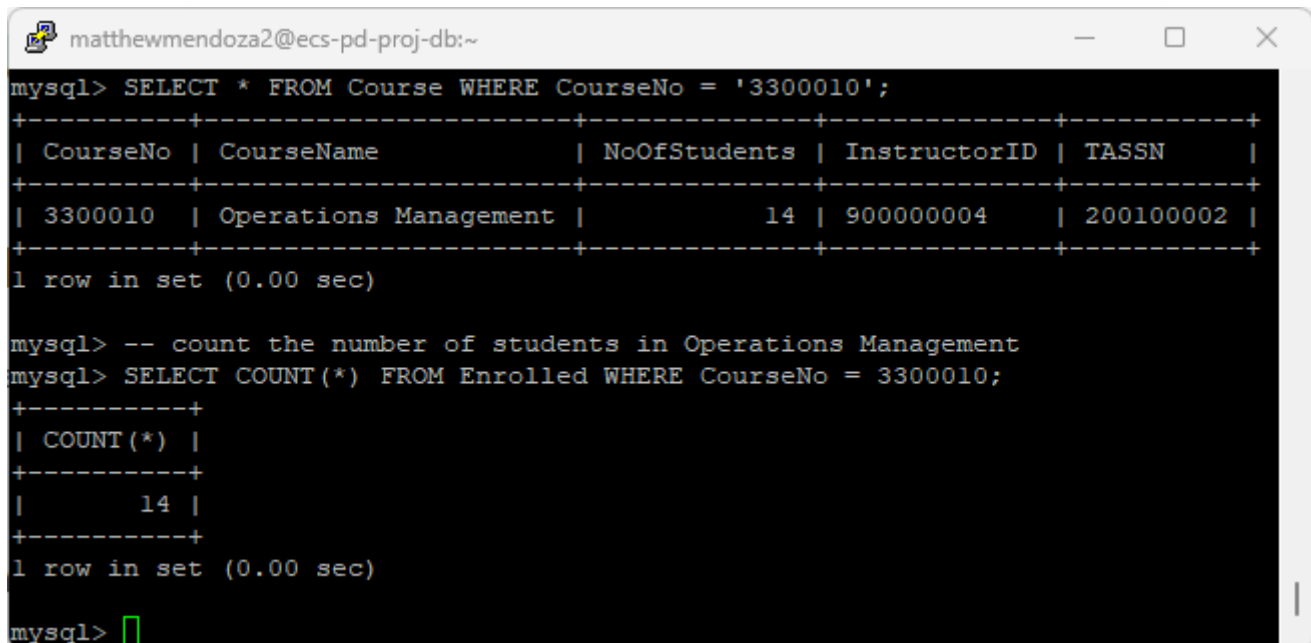
Inc_enrollment_number - Show NoOfStudents after adding 3 students

```
   /*
    VALIDATION : check the current NoOfStudents in the Course,
    shows all students after Inc_enrollment_number trigger was created.
    Expect 14 students in Operations Management - 14 NoOfStudents in course.
   */
   SELECT * FROM Course WHERE CourseNo = '3300010';
   -- count the number of students in Operations Management
   SELECT COUNT(*) FROM Enrolled WHERE CourseNo = '3300010';
```

```
matthewmendoza2@ecs-pd-proj-db:~                              —    □    X

mysql> SELECT * FROM Course WHERE CourseNo = '3300010';
+----------+----------------------+--------------+--------------+-----------+
| CourseNo | CourseName           | NoOfStudents | InstructorID | TASSN     |
+----------+----------------------+--------------+--------------+-----------+
| 3300010  | Operations Management |           14 | 900000004    | 200100002 |
+----------+----------------------+--------------+--------------+-----------+
1 row in set (0.00 sec)

mysql> -- count the number of students in Operations Management
mysql> SELECT COUNT(*) FROM Enrolled WHERE CourseNo = 3300010;
+----------+
| COUNT(*) |
+----------+
|       14 |
+----------+
1 row in set (0.00 sec)

mysql>
```
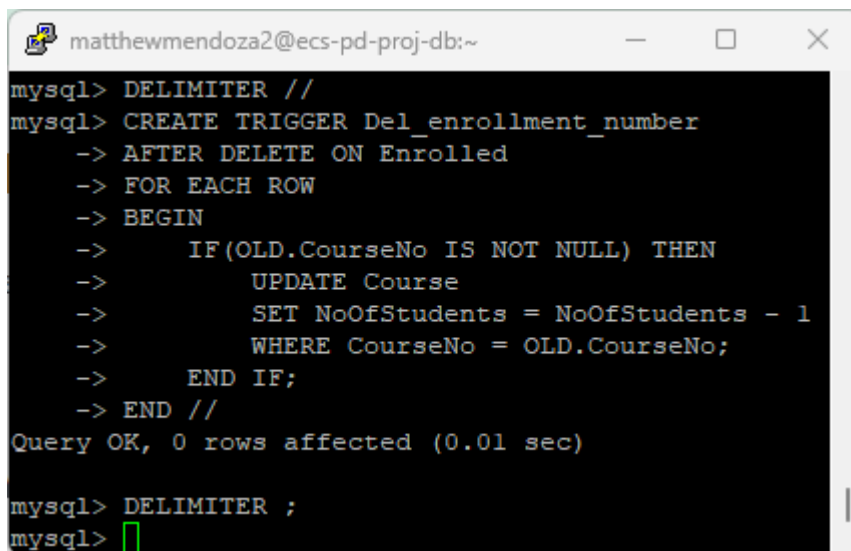
Trigger Name : Del_enrollment_number

```
DELIMITER //
CREATE TRIGGER Del_enrollment_number
AFTER DELETE ON Enrolled -- after deleting a record from the Enrolled table
FOR EACH ROW
BEGIN -- start the trigger
    IF(OLD.CourseNo IS NOT NULL) THEN
        UPDATE Course -- update the Course table with the new value of
NoOfStudents
        SET NoOfStudents = NoOfStudents - 1 -- decrement the NoOfStudents by 1
        -- where the CourseNo is the same as the CourseNo in the old record in the
Enrolled table
        WHERE CourseNo = OLD.CourseNo;
    END IF;
END //
DELIMITER ;
```


Del_enrollment_number - Show Current Number Of Students

```
/*
 VALIDATION : check the current NoOfStudents in the Course,
 shows all students before Del_enrollment_number trigger was created.
 Expect 14 students in Operations Management - 11 + 3 = 14 NoOfStudents.
*/
SELECT * FROM Course WHERE CourseNo = '3300010';
-- count the number of students in Operations Management
SELECT COUNT(*) FROM Enrolled WHERE CourseNo = '3300010';
```

```
matthewmendoza2@ecs-pd-proj-db:~                              —    □    ×
mysql> SELECT * FROM Course WHERE CourseNo = '3300010';
+----------+----------------------+--------------+--------------+-----------+
| CourseNo | CourseName           | NoOfStudents | InstructorID | TASSN     |
+----------+----------------------+--------------+--------------+-----------+
| 3300010  | Operations Management |          14 | 900000004    | 200100002 |
+----------+----------------------+--------------+--------------+-----------+
1 row in set (0.00 sec)

mysql> -- count the number of students in Operations Management
mysql> SELECT COUNT(*) FROM Enrolled WHERE CourseNo = '3300010';
+----------+
| COUNT(*) |
+----------+
|       14 |
+----------+
1 row in set (0.00 sec)

mysql>
```

Del_enrollment_number - Adding Three Students

```
/*
 DELETE CLAUSES - drop 3 students:
    Kyoya Ootori, Ferdinand von Aegir, and Dorothea Arnault.
 into Operations Management (CourseNo = '3300010')
*/
DELETE FROM Enrolled
WHERE
SSN = '190000003' AND -- student 12 - Kyoya Ootori
CourseNo = '3300010'; -- Operations Management

DELETE FROM Enrolled
WHERE
SSN = '190000006' AND -- student 13 - Ferdinand von Aegir
CourseNo = '3300010'; -- Operations Management

DELETE FROM Enrolled
WHERE
SSN = '190000008' AND -- student 14 - Dorothea Arnault
CourseNo = '3300010'; -- Operations Management
```

Del_enrollment_number - Show NoOfStudents after removing 3 students

```
/*
 VALIDATION : check the current NoOfStudents in the Course,
 shows all students after Del_enrollment_number trigger is created.
 Expect 11 students in Operations Management after the 3 DELETEs above
*/
SELECT * FROM Course WHERE CourseNo = '3300010';
SELECT COUNT(*) FROM Enrolled WHERE CourseNo = '3300010';
```